Final Report

Subject: Summary tables on results of Department of the Interior and Forest Service data call of NEPA records for fire fuel-treatment projects.

Date: 6/04/2003

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Introduction

This is a data analysis report for a "data call" on National Environmental Policy Act (NEPA) information about fuel-treatment projects in U.S. Department of the Interior (DOI) and the U.S. Department of Agriculture, Forest Service (FS), issued in September 2002. The data call requested information on projects that were implemented under NEPA procedures as environmental assessments (EA), environmental impact statements (EIS), or categorical exclusions (CX). Thirty data items were requested including the following project information: identification; location; size; cover type; fuels treatment type (burning, mechanical, biological, or chemical); predicted environmental impacts; actual environmental impacts after project completion; mitigation; and appeals. Many of the variables were narrative descriptions but all information was recorded in a uniform spreadsheet. This report describes the data call, outlines several iterations of data edits, and presents summary table analysis.

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DOI Data Call

DOI data included 100% of FY 2002 NEPA-compliant fuels projects and a 10% sample of FY 1998 through FY 2001 projects. Each bureau randomly selected its sample from a total list of projects using a random number generator either in Microsoft Excel or on the Web. DOI had separate National Interagency Fire Center (NIFC) coordinators from the Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), and National Park Service (NPS) to facilitate data collection among their respective field offices.

Forest Service Data Call

FS data included 100% of FY 2001 and FY 2002 fuels treatment projects from its National Fire Plan data base. The FS had a single Washington Office coordinator. Field staff entered the specific data items into another data base, which interfaced to output in DOI format. FS data collection was slightly behind DOI's, which allowed the FS to learn from DOI experiences and make mid-course corrections. Therefore, the FS avoided some manual data edit by adding several clarifying columns, but resulting information was the same as for DOI spreadsheet.

Data Edit

The initial data call produced information on more than 3,880 projects, but about 600 projects were not used because of incomplete or stalled projects, missing or unclear information, or data duplication. (Although these unused records are available upon request, an exact tracking is difficult because some project identification information changed during editing.)

Data for the 30 variables were combined into an Excel spreadsheet for each bureau or agency, and key variables were checked for data-coding differences. Five iterations of data editing were done through NIFC and FS coordinators to correct inconsistencies and screen out unusable records such as those with incomplete information or duplications. Data from each edit-iteration were kept for the records; analysis was conducted on the 5th iteration.

Data were edited to clarify significant/insignificant individual or cumulative environmental impacts from NEPA documentation, and clarify unexpected environmental impacts after project completion. Some additional "yes or no" prefix-coding was added to narrative responses to aid data quantification.

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Cover types, project resource codes, wildland–urban interface (WUI), project sizes, and treatment type were clarified to explain missing values and inconsistencies. Mitigation documentation was also examined. Some narrative variables were grouped or standardized by defining new variables for analysis.

After editing, 3,257 projects were available for analysis. Of these, 698 projects were not used because of insufficient documentation regarding monitoring of environmental effects after the project was completed. This left 2,559 projects (table 1) for the study of the NEPA process.

Table—1 Number of NEPA projects selected for study.						
NEPA category	**Agency**					**Total**
	BIA	**BLM**	**FS**	**FWS**	**NPS**	
	Frequency *Percent*					
CX	33 *1%*	42 *2%*	708 *28%*	230 *9%*	84 *3%*	1,097 *43%*
EA	39 *2%*	668 *26%*	352 *14%*	134 *5%*	241 *9%*	1,434 *56%*
EIS	1 *0%*	2 *0%*	25 *1%*	0	0	28 *1%*
Total	73 *3%*	712 *28%*	1085 *42%*	364 *14%*	325 *13%*	2,559 *100%*

Analysis was done with SAS statistical software. An Excel spreadsheet of all raw data variables and newly defined analysis variables is available upon request for the 2,559 projects examined.

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Analysis

Most of the projects were from the western U.S., but almost all states were included; only six states (Connecticut, Hawaii, Massachusetts, Ohio, Rhode Island, and Vermont) and the District of Columbia had no projects reviewed (table 2).

Table 2—Number of projects in each state.				
State	**Projects**		**State (cont.)**	**Projects**
Oregon	395		**Georgia**	20
California	336		**Louisiana**	19
Montana	172		**Tennessee**	19
Florida	153		**Kentucky**	15
Idaho	130		**Alaska**	14
Arizona	113		**North Carolina**	13
Colorado	103		**Virginia**	13
Arkansas	90		**Illinois**	11
New Mexico	88		**Maine**	7
North Dakota	84		**West Virginia**	5
Minnesota	81		**New York**	4
Alabama	73		**New Jersey**	3
Utah	70		**Delaware**	2
Washington	57		**Indiana**	2
Wisconsin	55		**Maryland**	2
South Dakota	47		**Pennsylvania**	2
Nevada	46		**Iowa**	1
Mississippi	45		**New Hampshire**	1
Nebraska	42		**Connecticut**	0
Kansas	40		**District of Columbia**	0
Wyoming	39		**Hawaii**	0
South Carolina	36		**Massachusetts**	0
Texas	33		**Ohio**	0
Oklahoma	31		**Rhode Island**	0
Missouri	24		**Vermont**	0
Michigan	23		**Total**	**2,559**

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The treatments for reducing fuel hazard included burning, mechanical thinning, chemical herbicides, and biological agents (such as goat grazing). Also included were rehabilitation projects after wildfire. Some projects had more than one treatment applied (table 3).

Table 3—All possible treatment combinations applied to projects.	
Treatment	**Frequency**
burn	1,492
mech	496
burn-mech	269
burn-rehab	101
rehab	70
mech-rehab	32
mech-chem	30
burn-mech-rehab	19
chem	15
burn-chem	12
chem-rehab	8
burn-mech-chem	4
chem-biol	4
burn-chem-rehab	3
biol	1
burn-mech-biol	1
burn-mech-chem-rehab	1
mech-chem-biol	1
Total	**2,559**

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A total of 3,074 treatments were applied to the 2,559 projects, in various combinations (table 4). Burning and mechanical thinning were the most common treatments.

Table 4—Number of different treatments applied.	
Treatment	**Frequency**
burn	1,902
mech	853
rehab	234
chem	78
biol	7
Total	**3,074**

Of the 2,559 projects, over half (1,518) involved treatments (1,860) to the wildland–urban interface (WUI) zone. Again, burning and mechanical thinning were the most common (table 5).

Table 5—For wildland–urban interface (WUI) only, number of different treatments applied.	
Treatment	**Frequency**
burn	1,100
mech	585
rehab	127
chem	42
biol	6
	1,860

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The predominate cover type was grassland but the majority of the other cover types were dry-site forest (table 6).

Table 6—Vegetation cover of the projects.	
Cover type group	**Frequency**
grassland	465
Douglas-fir	452
pondersoa pine	356
southern pine	296
shrubland	295
oak-pine	215
mixed conifer	119
pinyon-juniper	102
lodgepole/jackpine	99
wetland	84
urban/agriculture	40
mixed hardwood	36
Total	**2,559**

A major focus was the examination of those projects having either individual or cumulative environmental impacts predicted at project beginning (by the NEPA process). NIFC and FS coordinators double-checked these data (sometimes with field staff) to ensure that the stated narrative of predicted impacts was consistent with NEPA documents.

None of the 2,559 projects were documented in the NEPA process as expecting significant individual or cumulative effects. These predictions were then compared to actual environment impacts after the project was completed. There were 10 projects where the actual impact was not as expected.

The information source for determining actual impacts was from either personal observation of field staff associated with project, management plan documentation, or formal monitoring (table 7).

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NEPA Category	\multicolumn{4}{c}{Table 7—Information source on actual environmental impacts after project was completed.}
	\multicolumn{3}{c}{Information Source}	
	Personal observation	Formal monitoring	Long-term management plans	Total
	\multicolumn{4}{c}{Frequency / *Percent*}			
CX	622 *24%*	240 *9%*	235 *9%*	1,097 *43%*
EA	963 *38%*	305 *12%*	166 *6%*	1,434 *56%*
EIS	25 *1%*	3 *0%*	0	28 *1%*
Total	1,610 *63%*	548 *21%*	401 *16%*	2,559 *100%*

5th iteration data edit---